

**AN  
ECONOMIC  
IMPACT  
ANALYSIS OF  
DEFENSE  
SUPPLY  
CENTER  
RICHMOND**

**PREPARED FOR**

The Crater Planning District Commission

**PREPARED BY**

The Economic Information Services Division of  
the Virginia Employment Commission  
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## INTRODUCTION

This analysis estimates the economic impact from the expenditures by Defense Supply Center Richmond (DSCR) and staff on the economies that comprise a portion of the Crater Planning District. For the purpose of this study, the city of Richmond was included so that an economically sound model could be prepared. Those counties and cities are: Chesterfield, Dinwiddie, and Prince George Counties; Colonial Heights, Hopewell, Petersburg, and Richmond Cities. The study was conducted using expenditure data from DSCR.

The economic benefits to the area from spending by DSCR for operations, construction, maintenance and payroll, are measured in terms of output, employee compensation, and employment.

The impact analysis was conducted by the Economic Operations Research (EOR) section of the Economic Information Services (EIS) Division at the Virginia Employment Commission (VEC) on behalf of Mr. Dennis Morris, Executive Director of the Crater Planning District Commission. Mr. Morris coordinated the data gathering

process between the VEC and DSCR and served as the lead person on this project. The VEC and DSCR are extremely grateful for Mr. Morris's leadership and consultation.

## METHODOLOGY

VEC economists used IMPLAN (Impact Analysis for Planning) to estimate the impact of the expenditures on jobs and salaries and wages on the defined Crater Planning District and City of Richmond area economies. IMPLAN is a regional economic impact modeling system that provides estimates of the effects on output, employment, and salaries and wages from changes in economic activity. The IMPLAN model measures the economic impact in terms of direct, indirect, and induced effects.

*As an example, consider the increase in demand for auto parts. An increase in demand would cause the manufacturer of auto parts to increase production in order to meet that demand (**Direct Effect**). Consequently, the manufacturer would need additional production inputs, such as steel and machinery from those respective suppliers, generating an increase in production from the industries that supply the inputs (**Indirect Effect**). Finally, the increase in final demand would initiate an increase in household income (direct and indirect effects) generating an increase in income and employment in those industries that are recipients of household spending (**Induced Effect**).*

## **SUMMARY PROFILE**

In 2000, DSCR employed 2,910 people in total: 41 military, 2,300 civilians, and 569 contractors. The direct expenditures in 2000 totaled \$205.4 million, which by definition is the total cost of operation of DSCR including salary and wages. Salary and wage expenditures of \$172.0 million accounted for approximately 84 percent of the total. The remaining \$33.4 million was spent on an array of operation and building expenditures such as construction, operations supplies, furniture and computer supplies, educational services, equipment, utilities, and consulting services. The direct expenditures shown in tables 1 and 2 are less than the total expenditure data supplied by DSCR; this is due to natural leakages of money from the study area along with adjustments for wholesale and retail margins. Table 1 summarizes the employment and expenditures impact. In 2000, DSCR supported 5,940 full-time equivalent jobs (FTE) in the area, which includes 2,910 DSCR staff. The impact on the area's economy from expenditures amounted to \$226.4 million dollars.

*Table 1*

Summary of the  
Economic Impact of  
Defense Supply Center Richmond 2000  
(*\$Millions*)

	<b>Initial</b>	<b>Multiplier Effects</b>	<b>Total</b>
Employment	2,910	3,030	5,940
Expenditures	\$129.0	\$97.4	\$226.4

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.



## **IMPACT ANALYSIS**

This study revealed that in 2000 DSCR contributed well over a quarter of a billion dollars to the Crater Planning District and City of Richmond area economies through wage and non-wage expenditures. The following table shows the estimated economic impact of \$226.4 million in total output (value of all goods and services produced) supported an estimated 3,030 additional jobs, with an associated \$78.8 million in employee compensation. (These jobs were in addition to the 2,910 staff employed by DSCR).

Table 2 reveals more detail of the impact from DSCR. The direct effects associated with these expenditures after accounting for leakages and margins were an estimated \$129.0 million in output and 1,771 additional jobs to carry out the DSCR operations, with \$45.6 million in additional employee compensation. The direct spending generated added economic activity, that is, indirect and induced spending on other goods and services in the economy. The indirect effects from local inter-industry purchases were \$27.5 million in output and 328 jobs, with \$9.7 million in employee compensation. The induced effects that stem from the increased household income from the direct and indirect effects were \$69.9 million in output and 931 jobs, with \$23.4 million in employee compensation. The value added portion of this impact, which includes employee compensation, proprietary income, and incomes from rents, royalties, and dividends, along with indirect business taxes amounted to \$148.4 million.

*Table 2*  
Economic Component  
Analysis of  
Defense Supply Center Richmond 2000  
(*\$Millions*)

<b>Effects</b>	<b>Output</b>	<b>Value Added</b>	<b>Employee Compensation</b>	<b>Employment</b>
Direct	\$129.0	\$84.8	\$172.0*+ \$45.6	2,910*+ 1,771
Indirect	\$27.5	\$17.3	\$9.7	328
Induced	\$69.9	\$46.3	\$23.4	931
<b>Total</b>	<b>\$226.4</b>	<b>\$148.4</b>	<b>\$250.8</b>	

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.

\* DSCR Salary and Wages, and Employment

The Standard Industrial Classification (SIC) system arranges industries into particular groups that are in accordance with the structure of the economy. The groupings are subdivided into four sections: i.e., Division (1 digit), Major Group (2 digits), 3 digits, and 4 digits (see Appendix 1). Table 3 illustrates the economic impact of DSCR by industrial division as measured by employee compensation, output, and employees. It is evident that with the inclusion of DSCR, the Government Division is the largest impacted industry in regards to employment and employee compensation.

The Services Division was the second largest industry division in employee compensation, output, and employees. After allowing for financial leakages from the area borders, there still remains \$79.7 million of goods and services produced and sold in the area, \$37.2 in employee compensation associated with 1,383 full-time equivalent jobs. All other Divisions, with the exception of Agriculture and Mining as expected, have at least one measure of impact that is significant to the defined Crater Planning District and City of Richmond area economies.

*Table 3*

Impact Analysis of DSCR  
Defense Supply Center Richmond 2000  
(*\$Millions*)

<b>Industry</b>	<b>Employee Compensation</b>	<b>Output</b>	<b>Employment</b>
Agriculture	\$0.117	\$0.473	12
Mining	\$0.012	\$0.094	0
Construction	\$1.561	\$3.809	49
Manufacturing	\$2.475	\$13.233	62
TCPU*	\$4.846	\$21.332	115
Trade*	\$21.709	\$48.113	1,112
FIRE*	\$7.843	\$52.351	199
Services	\$37.191	\$79.679	1,383
Government	\$174.401	\$6.641	2,955
Other	\$0.627	\$0.627	52
<b>Total</b>	<b>\$250.782</b>	<b>\$226.352</b>	<b>5,940</b>

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.

\* Transportation, Communications, and Public Utilities; Wholesale and Retail Trade; Finance, Insurance, and Real Estate.

\*\* Values of Domestic and Foreign Trade; State and Local Non-Education, Federal Non-Defense production of services.

## TAX ANALYSIS

The calculation of the tax receipts by the State of Virginia and the respective local governments is an essential part of this economic impact analysis.

Virginia's individual income tax is the largest component of tax revenue, and for the most recent year available accounted for 31.1 percent of total taxes collected. Our analysis revealed the individual income taxes generated in 2000 through the activities of DSCR were 48.3 percent (\$10.3 million) of the total collected in the area. This positive difference is most likely reflective of the higher levels of income circulating in a metropolitan area. Our estimated 16.2 percent of total tax that the Sales Tax represents parallels that of the State at 15.8 percent. Corporate Income Tax at 8.4 percent of total tax is four times higher than the State's respective portion. This disparity is due to the significant amount of capital devoted to contractual services such as computer and data processing services, computer purchases, and management and consulting services.

Table 4

### Tax Impact of Defense Supply Center Richmond by Category of Tax

	<b>Tax Amount</b>	<b>Percent of Category</b>	<b>Percent of Total</b>
<b>Corporations</b>			
Corporate Income	\$1,780,704	99.72	8.36
Dividends	\$4,963	0.28	0.02
<b>Total</b>	<b>\$1,785,667</b>		8.38
<b>Indirect Business Taxes</b>			
Motor Vehicle License	\$104,558	1.17	0.49
Property Tax	\$4,190,127	46.91	19.66
State/Local Non-Tax	\$496,072	5.55	2.33
Sales Tax	\$3,448,012	38.60	16.18
Severance Tax	\$1,142	0.01	0.01
Other Tax	\$693,014	7.76	3.25
<b>Total</b>	<b>\$8,932,925</b>		41.92
<b>Personal Taxes</b>			
Income Tax	\$10,282,063	97.08	48.25
Motor Vehicle License	\$108,383	1.02	0.51
Non-taxes	\$144,741	1.37	0.68
Property Tax	\$37,096	0.35	0.17
Other Tax	\$18,524	0.17	0.09
<b>Total</b>	<b>\$10,590,807</b>		49.70
<b>Total Taxes</b>	<b>\$21,309,399</b>		

Source: Virginia Employment Commission, July 2002. Corporate Income Tax along with Personal Income Tax estimates derived from the use of average tax rates calculated by the Weldon Cooper Center for Public Service, University of Virginia. Totals may not sum correctly due to rounding.

## **IN CONCLUSION**

In this analysis we have shown that Defense Supply Center Richmond is an important contributor to the economic activity of the Crater Planning District. Hundreds of millions of dollars in wages and industry sales, and thousands of jobs are the economic products of the operation of DSCR.

Another dimension this analysis does not consider, yet it is of great importance and that is what economic role DSCR will play in the decade to come. There is no accurate way to numerically forecast such a value; however, it can be stated with a significant level of confidence that DSCR's economic importance will continue to gain prominence as we progress into the 21<sup>st</sup> century. By all indications our national economy will not attain the levels of growth that were witnessed in the waning years of the previous century. Employment, corporate profits, and stock market values are expected to be lackluster in comparison. Moreover, and very importantly, this economic picture is a mirror image of the global economy. The Commonwealth of Virginia and its many counties and cities should on average experience similar patterns of growth to that of the nation and the world. Therefore, considering the relative stable in-flow of Federal revenue, DSCR's distinction as an economic engine will continue to expand in the Crater Planning District as growth slows in the state and region.

While these quantifiable effects are readily visible, we cannot capture the deep reaching effects from DSCR's broad array of community involvement. For instance, DSCR's active engagements with the local Emergency Medical Services and neighboring school children have long-term quality of life ramifications that can only be intuitively championed. (See Appendix 2)



## Appendix 1

### SIC Division Structure

- A. Division A: Agriculture, Forestry, And Fishing
  - Major Group 01: Agricultural Production Crops
  - Major Group 02: Agricultural Production Livestock And Animal Specialties
  - Major Group 07: Agricultural Services
  - Major Group 08: Forestry
  - Major Group 09: Fishing, Hunting, And Trapping
- B. Division B: Mining
  - Major Group 10: Metal Mining
  - Major Group 12: Coal Mining
  - Major Group 13: Oil And Gas Extraction
  - Major Group 14: Mining And Quarrying Of Nonmetallic Minerals, Except Fuels
- C. Division C: Construction
  - Major Group 15: Building Construction General Contractors And Operative Builders
  - Major Group 16: Heavy Construction Other Than Building Construction Contractors
  - Major Group 17: Construction Special Trade Contractors
- D. Division D: Manufacturing
  - Major Group 20: - Food And Kindred Products
  - Major Group 21: Tobacco Products
  - Major Group 22: Textile Mill Products
  - Major Group 23: Apparel And Other Finished Products Made From Fabrics And Similar Materials
  - Major Group 24: Lumber And Wood Products, Except Furniture
  - Major Group 25: Furniture And Fixtures
  - Major Group 26: Paper And Allied Products
  - Major Group 27: Printing, Publishing, And Allied Industries
  - Major Group 28: Chemicals And Allied Products
  - Major Group 29: Petroleum Refining And Related Industries
  - Major Group 30: Rubber And Miscellaneous Plastics Products
  - Major Group 31: Leather And Leather Products
  - Major Group 32: Stone, Clay, Glass, And Concrete Products
  - Major Group 33: Primary Metal Industries
  - Major Group 34: Fabricated Metal Products, Except Machinery And Transportation Equipment
  - Major Group 35: Industrial And Commercial Machinery And Computer Equipment
  - Major Group 36: Electronic And Other Electrical Equipment And Components, Except Computer Equipment
  - Major Group 37: Transportation Equipment
  - Major Group 38: Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks
  - Major Group 39: Miscellaneous Manufacturing Industries
- E. Division E: Transportation, Communications, Electric, Gas, And Sanitary Services
  - Major Group 40: Railroad Transportation
  - Major Group 41: Local And Suburban Transit And Interurban Highway Passenger Transportation



- [Major Group 42: Motor Freight Transportation And Warehousing](#)
- [Major Group 43: United States Postal Service](#)
- [Major Group 44: Water Transportation](#)
- [Major Group 45: Transportation By Air](#)
- [Major Group 46: Pipelines, Except Natural Gas](#)
- [Major Group 47: Transportation Services](#)
- [Major Group 48: Communications](#)
- [Major Group 49: Electric, Gas, And Sanitary Services](#)
- F. [Division F: Wholesale Trade](#)
  - [Major Group 50: Wholesale Trade-durable Goods](#)
  - [Major Group 51: Wholesale Trade-non-durable Goods](#)
- G. [Division G: Retail Trade](#)
  - [Major Group 52: Building Materials, Hardware, Garden Supply, And Mobile Home Dealers](#)
  - [Major Group 53: General Merchandise Stores](#)
  - [Major Group 54: Food Stores](#)
  - [Major Group 55: Automotive Dealers And Gasoline Service Stations](#)
  - [Major Group 56: Apparel And Accessory Stores](#)
  - [Major Group 57: Home Furniture, Furnishings, And Equipment Stores](#)
  - [Major Group 58: Eating And Drinking Places](#)
  - [Major Group 59: Miscellaneous Retail](#)
- H. [Division H: Finance, Insurance, And Real Estate](#)
  - [Major Group 60: Depository Institutions](#)
  - [Major Group 61: Non-depository Credit Institutions](#)
  - [Major Group 62: Security And Commodity Brokers, Dealers, Exchanges, And Services](#)
  - [Major Group 63: Insurance Carriers](#)
  - [Major Group 64: Insurance Agents, Brokers, And Service](#)
  - [Major Group 65: Real Estate](#)
  - [Major Group 67: Holding And Other Investment Offices](#)
- I. [Division I: Services](#)
  - [Major Group 70: Hotels, Rooming Houses, Camps, And Other Lodging Places](#)
  - [Major Group 72: Personal Services](#)
  - [Major Group 73: Business Services](#)
  - [Major Group 75: Automotive Repair, Services, And Parking](#)
  - [Major Group 76: Miscellaneous Repair Services](#)
  - [Major Group 78: Motion Pictures](#)
  - [Major Group 79: Amusement And Recreation Services](#)
  - [Major Group 80: Health Services](#)
  - [Major Group 81: Legal Services](#)
  - [Major Group 82: Educational Services](#)
  - [Major Group 83: Social Services](#)
  - [Major Group 84: Museums, Art Galleries, And Botanical And Zoological Gardens](#)
  - [Major Group 86: Membership Organizations](#)
  - [Major Group 87: Engineering, Accounting, Research, Management, And Related Services](#)
  - [Major Group 88: Private Households](#)
- J. [Division J: Public Administration](#)
  - [Major Group 91: Executive, Legislative, And General Government, Except Finance](#)
  - [Major Group 92: Justice, Public Order, And Safety](#)

*Economic Impact Analysis of DSCR on the Crater Planning District Economy.*

- [Major Group 93: Public Finance, Taxation, And Monetary Policy](#)
- [Major Group 94: Administration Of Human Resource Programs](#)
- [Major Group 95: Administration Of Environmental Quality And Housing Programs](#)
- [Major Group 96: Administration Of Economic Programs](#)
- [Major Group 97: National Security And International Affairs](#)
- [Major Group 99: Nonclassifiable Establishments](#)

## **Appendix 2**

**DSCR** is proud that its school partnership program is the largest in the Richmond Metropolitan area and one of the largest in the state. Over 150 volunteers donate time to our command-sponsored programs with four area schools. In addition to serving as weekly tutors and mentors, employees participate in career fairs, transportation days, and promote diversity by assisting organizations with multicultural day/special emphasis day events.

### Employees Give Generously to the Community

DSCR employees traditionally lead the way for federal agencies in the Richmond Metropolitan area through giving generously to the Combined Federal Campaign. Last year, the DSCR work force gave over \$151,000 to the many agencies that receive funding through the CFC/United Way programs. This represented a \$31,000 increase over the previous year's contributions.

### Serving in the Community

DSCR employees serve their community in many civic, professional, and business organizations, including the Richmond Rotary; the Greater Richmond Chamber of Commerce; the Chesterfield Business Council; the Jefferson Davis Economic Development Association; and the Greater Richmond Employment Assistance Team, a readiness program that trains and prepares welfare recipients for transition from welfare dependency to the work force.

### Chesterfield County EMS

The center has had a reciprocal mutual aid agreement with the Chesterfield County Fire Department since 1994. When needed, both organizations can call upon the assets of each other for fire, rescue, emergency medical services, and hazardous material support.

### Critical Telecommunications Support Provided to Local, State, and Regional Governments

- *Chesterfield County Emergency Communication Tower.*

The Center responded to a critical need of Chesterfield County by providing land and security for the county to install a 400-foot radio tower as part of the county's emergency communication system.

- *Provides radio system for emergency responders from Norfolk to Hopewell.*

Radio communications at Norfolk Naval Base, Norfolk Shipyard, Fort Lee, and Hopewell pass through a radio system at the Center that give these localities the ability to communicate within their departments and with each other. Prince George and Dinwiddie Counties, the city of Colonial Heights, and U.S. Army facilities along the east coast are considering becoming part of the system.

- *Serves as a regional network data hub for the central Atlantic Region.*

The Center maintains a network hub service for the Defense Information System Agency. This regional network hub supports a Department of Defense worldwide network.

- *Communications center serves as a gateway for message traffic.*

Classified and unclassified messages from Philadelphia, Columbus and Boston are handled by the 24x7 communication center.

- *Serves telephone gateway to the European and the Pacific Regions.*

### Virginia Blood Service

Center employees donate approximately 1,000 units of blood to the Virginia Blood Service each year. We are a three-time winner of Richmond Metropolitan Blood Services' Friends-4-Life Award, and an eight-time recipient of the Charles R. Drew Award for outstanding achievement in the blood donor program.

Community Involvement in Environmental Restoration Program

DSCR was placed on the National Priority List (Superfund) in 1987 and since then has been teaming with the Environmental Protection Agency, the Virginia Department of Environmental Quality, and Chesterfield County to clean up the contaminated areas. Most recently, the Center has created a community based Restoration Advisory Board to advise the commander on environmental issues.

Technical Support to a Chesterfield County School

An eight-person team from DSCR donated their time on a Saturday to install high speed cabling in the classrooms at Ettrick Elementary School. The new cable allowed computer-networking connections in each classroom.

Source: Defense Supply Center Richmond, 2002.